Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Reply Comments in the Matter of

Promoting Expanded Opportunities for Radio Experimentation and Market Trials under Part 5 of the Commission's Rules and Streamlining Other Related Rules
ET Docket No. 10-236

2006 Biennial Review of Telecommunications) Regulations - Part 2 Administered by the)
Office Of Engineering and Technology (OET)
ET Docket No. 06-105

Comments of Mark Cummings Ph.D., WiNTeB Program Director

Background

WiNTeB (Wireless National Test Bed) is a project led by Mark Cummings Research Professor, Kennesaw State University in Atlanta with Colleagues at UCSD (University of San Diego), UCLA (University of California Los Angeles), USC (University of Southern California) and University of Kansas working closely with national cellular network operators. It is developing a national wireless test bed to support at scale research in wireless communications. It seeks to support researchers who are focused on Field Research (such as mobile health, environmental, social, political, etc. researchers), Network Researchers investigating improving current cellular and associated hybrid networks, and those researching New Modes. It is intended to primarily support academic researchers, but will also provide services to start-up and established companies.

WiNTeB has received a small amount of funding from NSF (National Science Foundation) to conduct a Workshop bringing all of the stake holders together to validate the need for and further define a US Wireless National Test Bed. Several FCC staff members where involved in that Workshop and in follow-on discussions. The Workshop validated the need for the test bed. Subsequent formal communication from NSF indicated that they valued the concept and were looking for a very detailed proposal for funding to help support the creation and early operation of the test bed. That proposal is scheduled to be delivered in October of this year.

Only one of the three Winteb Service Groups is directly affected by this NPRM. That service is the WiNTeB New Modes Research Service. However, the other two services may address some of the desires expressed in some of the reply comments.

The WiNTeB New Modes Research Service is conceived of as using FCC Experimental Spectrum. Experimental spectrum would be employed that is far enough away from production

networks to avoid interference but close enough to allow commercially available equipment to be tuned over to it. This experimental equipment will be co-located at existing commercial network operated facilities. Thus, we commend the FCC for this initiative and wish to support it in any way that we can.

The two other WiNTeB research infrastructure services also rely on close cooperation with cellular operators, each in a slightly different fashion.

Review of Comments

Interference

Verizon, AT&T, WCAI and CTIA amongst others expressed concerns about interference. We suggest that WiNTeB can help address those concerns. If the Commission provides for long term establishment of a not for profit entity such as WiNTeB, WiNTeB will have a very critical incentive to protect licensed users. Whereas a particular researcher might be imagined to have an incentive to quickly get in, do their research without proper regard for other users and get out; WiNTeB can only survive if it maintains controls which protect existing users. Furthermore, because WiNTeB depends, at its core, on cooperation and partnership with national operators, it not only has a strong incentive to protect these users, but has operational channels of communication which can quickly fix something if an unexpected problem occurs.

Thus we recommend that the rules in the NPRM be amended to specifically provide for such third party organizations as WiNTeB both in form and in length of anticipated operation.

Broaden to All

Boeing, TIA, Tech America, Qualcomm, Motorola, and others have suggested that access to these experimental licenses be expanded to other types of organizations than just academic institutions. We point out that WiNTeB is one possible vehicle for so doing. We do so, with some humility recognizing that companies such as Qualcomm and Motorola maintain extensive facilities. However, early investigations have indicated that even these large companies with distinguished histories of accomplishment, may find WiNTeB a useful tool for some studies. Smaller companies and early stage start-ups may find a broader range of research activities possible only through infrastructure provided by WiNTeB.

Therefore, we support Medtronic's recommendation on cost recovery rules and add that such rules should specifically allow for operations such as WiNTeB.

Geographic Scope

As we move to a nation where 90% of the population is connected wirelessly 95% of the time we are encountering problems of scale, heterogeneity, and volatility. It is very difficult to address these problems in small test ranges in remote areas. Research at scale that can address questions of spectral efficiency, interference minimization, etc. in a context directly applicable to commercial operation is needed. Therefore, we disagree with the Cisco recommendation that experimental licenses be restricted to specific campuses.

Use Cases

The Mayo Clinic in their comments suggests that all of the mobile health research they anticipate may not be addressed in this NPRM. We agree. We further suggest that the WiNTeB Field Research Service and The WiNTeB Network Research Service may meet many of those not addressed in this NPRM. To avoid taking up the Commission's time with a detailed discussion of these use cases, we suggest that WiNTeB and the Mayo Clinic conduct that detailed discussion off line.

Conclusion

In reviewing the comments, we find that WiNTeB may alleviate some of the concerns of others, while helping the Commission meet its fundamental goals. To help WiNTeB accomplish this, we recommend that the rules specifically provide for such third party, not for profit, research infrastructure suppliers. Further, that the rules address the long term operation of such an infrastructure provider as well as its needs for cost recovery mechanisms.

WiNTeB thanks the Commission for undertaking this initiative and stands ready to provide any further information the Commission would find helpful.

Yours truly,

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